

Master Project Proposal

Title: The transcriptomes of human T cells during differentiation

Synopsis: CD4 T cells are the organisers of immune responses and are essential for IgG production. They sequentially differentiate from thymocytes into circulating naïve and memory T cell subsets, while committed to conventional or regulatory lineages, and define an ecology of cell types efficiently limiting autoimmunity and pathology of the immune responses. We propose to explore available databases of human CD4 T cell to analyse transcriptomes during their differentiation using innovative computational methodologies. Our aim is to identify relevant T-cell imbalances that can be targeted in future therapies for Primary Immunodeficiency patients.

Key words: RNA-seq, T cells, human, Primary Immunodeficiency, Machine Learning

Supervisor: *Alexandre Raposo, AESousa Lab, alexandre.raposo@medicina.ulisboa.pt*

Co-Supervisor: *Ana Espada de Sousa, AESousa Lab, aesousa@medicina.ulisboa.pt*

Webpage of the group: <https://imm.medicina.ulisboa.pt/en/investigacao/labs/sousa/>

Remunerated or volunteer training: volunteer